DOCUMENT RESUME

ED 392 991 CE 071 190

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TITLE Transfer beyond Workplace Literacy Classes: Twelve Case Studies and a Model.
PUB DATE 3 Feb 96
NOTE 36p.; Paper presented at the International Reading Association Conference on Adolescent and Adult Literacy (Washington, DC, February 3, 1996).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Adult Basic Education; Case Studies; *Literacy Education; Models; *Outcomes of Education; *Performance Factors; *Transfer of Training; *Workplace Literacy

ABSTRACT

Twelve case studies of learners in workplace literacy programs at cosmetics and medical instruments firms and a municipal services department were conducted to identify key elements related to broad transfer of the skills learned in the classes to life outside the classroom. A general model of the factors (instructional elements, learner predispositions, and perceived external demands and opportunities) likely to influence transfer of learning was constructed from previous research and was used to gather information through the following activities: classroom observations; analyses of assignments and materials; learners' weekly practice reports; and interviews with learners and their teachers, family members, and coworkers. Data were gathered regarding 25-30 hours of instruction occurring over 6-10 weeks. Of the 12 learners studied, 5 exhibited high degrees of change in their behavior in their jobs and with their families as a result of participation in workplace literacy training; 3 exhibited moderate degrees of change; and 4 exhibited low degrees of change. The following factors were associated with high degrees of change: at least one clear learning goal; perception of high daily literacy demands; positive rapport with instructor; and clearly perceived links between instruction and daily applications. (Contains 15 references.) (MN)

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Transfer Beyond Workplace Literacy Classes: Twelve Case Studies and a Model

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A paper presented at the
International Reading Association Conference on
Adolescent and Adult Literacy
Washington, D.C.
February 3, 1996

ED 392 991

Workplace literacy classes are typically brief (i.e. less than 50 hours of instruction) and quite diverse in the mix of goals addressed by instruction. Instruction in most classes has some link to current or future learner jobs, but also often addresses learner-centered needs beyond immediate employment tasks. It is also common for workplace literacy classes to include some general basic skills education, sometimes preparation for the GED test, and occasionally help with improved language use for English as Second Language learners. Further, there is evidence that learner gain can be demonstrated with even brief instruction, if assessment instruments very closely match what has been taught (Mikulecky, Lloyd, Horwitz, Masker & Siemantel, 1996).

Learners, instructors, and funders of workplace literacy programs usually want and expect more than learner gain on assessment instruments, however. They hope and expect that what is learned in classes will transfer, in some form, beyond the classroom to the work and private lives of learners. These expectations often extend to expanded and productive literacy practice, increased educational aspirations, and improved attitudes and senses of personal effectiveness with literacy. Unfortunately, transfer of literacy skills is neither automatic nor often far reaching (Salomon & Perkins, 1987; Mikulecky, Albers & Peers, 1994). To achieve a high level of reading comprehension in new contexts, it is often necessary to explicitly provide instruction with materials from that new context (Dole, Duffy, Roehler & Pearson, 1991).

Few studies have examined the impact of instruction beyond the skill level (Mikulecky, Albers & Peers, 1994). Some recent studies have examined the broad impact of literacy programs upon changed literacy practices (Lytle, 1990; Lytle & Schultz, 1990; Mikulecky & Lloyd, 1993). In relation to transfer from workplace literacy classes to changed literacy practices at work and home, results have been generally positive, but mixed. Even though instruction linked to workplace tasks tends to transfer to increased workplace literacy practice, student by student analyses reveal dramatic effects for a few learners, some effects for others, and no noticeable effects for still others. General basic skills instruction has less impact upon the workplace than does targeted, workplace-specific instruction, but still some learners manage to transfer what is learned in general classes to workplace use. In a parallel fashion, a few learners in focused, work-specific classes still manage to stretch what they've learned for the workplace to home and personal use.

This study is an attempt to examine and understand key elements related to broad transfer of what is learned in workplace literacy classes to life outside the classroom. In an informal pilot study during 1993-1994, the researchers asked a few workplace literacy instructors and learners to carefully document what they covered in class and what sorts of literacy activities learners engaged in on a weekly basis. Structured and informal discussions between instructors and learners were also used to establish a broader context for who learners perceived themselves to be in relation to literacy and literacy demands. From this pilot study and some previous research, a general model was constructed as a potential tool to help identify factors likely to have greatest influence upon transfer beyond workplace literacy classrooms. Discussions with instructors and

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examination of learner weekly journals and interview remarks suggested that key factors influencing transfer resided in the following areas:

1) instructional elements,
2) learner predispositions, and
3) external demands and opportunities.

This study describes the initial testing of this model using case studies of twelve learners in three different workplace literacy programs.

The Model

The pilot study indicated that when learner changes occurred, they occurred in several forms. These included changes in the frequency, depth, and breadth of the literacy practices in which learners chose to participate. Sometimes they also included more subtle attitudinal and social changes such as increased confidence and willingness to try new activities, greater oral participation in team meetings, a reported greater openness to the opinions of others in work and family matters, and more positive detailed plans for the future. In the pilot study, learners sometimes attributed these changes to how they were treated by teachers rather than what they were explicitly taught.

Instructional Elements: In relation to instruction, researcher observations and information gathering were open-ended in the sense that note-taking attempted to capture specific actions of instructors and learners during classroom activities. Based upon findings from the pilot study and previous research which indicated workplace specific instruction produces clearer improvement in workplace specific literacy tasks (Mikulecky , 1994), special attention was directed to the degree that direct linkage to work or home situations was apparent in lesson goals, materials used, as well as examples provided by instructors or solicited from students. Along these lines, researchers were particularly alert to explicit attempts to link instruction to individual learner interests or to immediate work demands. In the pilot study, several workers expressed appreciation at being shown how to do something (modeling) as opposed to simply being told. This paralleled learner comments about watching how the teacher worked with the learner and others as a way of learning how to work with co-workers in teams. Others expressed appreciation for a variety of learning formats (i.e. individual, small groups, full class). As a result, researchers also made note of the incidence of instructor modeling and of full class, small group, and individual activities.

Learner Predispositions: The pilot study as well as a good deal of research indicates that prior experiences and attitudes play significant roles in ability to learn and transfer. Alexander, Kulikowich & Jetton (1994) reviewed sixty-six studies on prior knowledge and task conditions reporting that learners with prior experiences and subject knowledge consistently gained more from learning experiences than did those without such previous experience and knowledge. However, for many adult learners there can be a negative side to prior experience. Researchers report that many have had extremely negative previous experiences with school and adult education and such experiences keep them from learning and participating due to extremely weak self-concepts as learners (Van Tilburg and DuBois, 1989 ; Bean, Partanen, Wright, & Aaronson, 1989). These negative previous experiences and self-concepts can inhibit ability to learn and sometimes cause learners to leave classes at the first sign of difficulty. On the other hand, some learners have long positive histories of being able to use literacy in pursuit of a personal interest (i.e. hobbies, religion, recreational interests, etc). The presence of interests, especially linked to literacy, can enhance learning by invoking deeper comprehension processes and more personal extension of learning (Tobias, 1994). In a related manner, some adults value learning a great deal and select it as a goal while other adults have no such goal and may attend classes with a good degree of skepticism. The pilot study indicated that the predispositions

discussed above (i.e. goals, interests, self-concept as a learner, and previous experience) may have a great deal to do with the success or failure of instruction leading to transfer. Interviews with instructors and learners, as well as with co-workers and family members, focused upon learner interests and predispositions as well as changes in these areas.

Perceived Literacy Demands and Opportunities: A rationale for most workplace literacy programs is that technology, restructuring, and other changes have increased or will increase literacy demands upon workers and therefore some workers need additional education and training. The pilot study indicated that the degree to which these demands are perceived by the learner may play an important role in their learning. Learners who are told about new demands but don't personally experience them (either because the literacy demands haven't yet occurred or because the structure of daily work makes it possible to still avoid literacy) tend to be very skeptical of education and training. A somewhat related area is the perception of opportunity for literacy use. Two individuals in the same setting may perceive quite different literacy opportunities. For example, one parent may perceive and take advantage of the opportunity to read to a child while another never considers it. In solving a problem, one worker may take advantage of literacy as a way to gather needed information while another will gather information only when it is available orally. This sense of perceived opportunity often overlaps with such predispositions as personal goals and sense of self as learner. It is also closely related to the current setting in which the learner finds him or herself. In some settings, there is smply little opportunity for literacy.

Impact Upon Changes and Transfer: A good deal of workplace literacy research has addressed the relative effectiveness of different instructional strategies upon student learning (Philippi, 1989; Haigler, 1990; Kutner et al. 1992). Most learners, instructors, and funders hope that relatively brief classes will bring about a good deal more, in terms of personal change at work and home, than simply improved skills. Though workplace literacy programs share much with any form of adult instruction, the brevity of class length and special demands of the workplace often make these classes an unusual form of adult learning. This study is an attempt to use twelve case studies to examine the relative contributions of instruction, learner predisposition and perceived literacy demands and opportunities to transfer of learning beyond the classroom.

Class Settings and Learners

Information for the twelve learner case studies are drawn from a series of classroom observations, assignment and materials analyses, teacher interviews, learner interviews, interviews with family members and co-workers, and learner weekly practice reports. To increase the range of instructional approaches as well as the range of learner predispositions and demands, learners were drawn from five classes in three different workplace literacy programs. The programs were located at a cosmetics firm, a medical instruments firm, and an urban adult basic education center which served municipal employees. Data were gathered over 25-30 hours of instruction which occurred over a period of 6-10 weeks.

Cosmetics Firm: Two hour classes met twice weekly at a cosmetics firm. Students volunteered and were reported by instructors to have a mix of basic skills and English as Second Language needs. Instruction addressed literacy and mathematics skills which instructors judged to be needed by learners for the workplace and for personal use. Instruction occurred in classes of 10-12 students, employed full class, small group, and individual activities, and used a mix of industry related materials, general basic skills materials, and special materials selected for learner individualized assignments. Six students from three different classes who were judged by instructors as likely to attend class regularly were selected for case studies. They were:

Mike: A maintenance technician in his late 40's who has worked with the company for nearly twenty years. He is married and has three children in their teens. Mike received some post-high school training as a young enlisted man in the military, but is not confident about his reading and mathematics abilities and reported being sometimes ashamed. The instructor reported Mike had a reputation for being difficult in team situations at work. He is involved with his church and religion on a daily personal level and as part of Sunday school teaching and program planning. Recently Mike has faced new demands as a result of new quality control and team practices at the company and because he has been encouraged to take greater leadership roles in providing advice on purchasing new equipment.

Lorraine: A very recently promoted quality technician in her late-30's who has worked for the company for 16 years. She is a single mother with children aged 9 and 6. Before attending class, she reported reading little either at home or on the job and not being comfortable with print materials and mathematics. She reported volunteering for class because the increased reading, writing, computational, and leadership demands of her new job have created a desire for more knowledge and skills.

Elizabeth: A machine operator in her late 40's who is responsible for supervising 12 other workers. She has two adult children, the youngest of whom lives with her. For several years, Elizabeth has done a good deal of reading and writing for her job (i.e. memos, reports, audits, and manuals) as well as regular personal reading of newspapers and books. Her job as supervisor now requires increased team participation. She took the class based on a general desire for self-improvement and because recruiters mentioned it would include workplace communication skills.

Wilma: A machine operator in her mid-50's who has been with the company for more than two decades. Wilma has four grown children and lives with a daughter and very young grand-daughter. Wilma offered no clear reason for entering the class. She reported a history of extensive home reading of newspapers and magazines, and of poetry writing. Her current job involves only a small amount of routine reading of cosmetic bottle labels and materials lists. Though reports indicate this may change, no specific time frame has been mentioned.

Trang: A stock worker in his late 30's who has been in his current job for five years. Trang is from Thailand, spoke little English upon entering the program, but can speak French and Russian and holds an economics degree. He lives with his wife, his sister, and three children. His current job requires little reading or even speaking of English, though he reads production graphs out of interest. At home, with the help of his sister, he attempts to read newspapers, magazines, and the older children's homework. His motivation for entering the class was to improve his English.

Rosetta: A machine operator in her early 30's with one year's experience on the job. She has three school-aged children and is actively involved with her church. Rosetta is Hispanic and has a moderate command of English, partly acquired from attending previous classes at work. At the beginning of the class she reported little reading or writing connected with her job other than predictable forms like production orders, down-time sheets and a computer record system. Her department has recently started production meetings which require speaking and listening in English. At home she reported reading her Bible and some magazines and books which were mostly in Spanish, but occasionally in English.

Medical Instruments Firm: This firm makes electronic medical instruments and is in the process of being certified for ISO 9000. Part of the certification process involves developing written procedures for all operations, making sure workers are able to follow procedures as well as monitor productivity, and providing a program of continuous training aimed at continuous improvement. Production work involves delicate assembly operations, and workers are primarily

women. The company's human resource director was charged with making sure employees were ready for the new literacy demands likely to emerge from the ISO guided production processes. Workers were screened for basic skills using the Test of Adult Basic Education (TABE), with the hope that all workers would score at least in the "advanced" range, which is roughly high school level. Several employees scored at the "difficult" range, which is roughly middle-school level. The human resource director judged that these and other employees would need literacy training. The director and a local program provider collaboratively developed a workplace literacy course aimed at improved reading comprehension--especially with the reading of procedures. A dozen women volunteered for class, some with very strong encouragement from the human resource director. Class sessions were two hours, twice a week, for sixteen weeks. (Only six weeks of class were included in this study.) The course focused upon reading and writing procedures--starting with examining familiar procedures such as recipes and appliance directions and then working toward job-related procedures. Personal interests projects were also an element of the course. Full class discussions, group activities, and homework writing assignments were used. Three of the students, predicted to have regular attendance and within the "difficult" range on the TABE, were selected for case studies. They were:

Jeanne: An electronics assembler in her late-30's who has had experience at several stations on the assembly line during the past five years. Jeanne has graduated from high school and is married with one out-of-school and one school-aged child at home. She reports that her present job requires little reading or writing other than filling in a log sheet at the end of the day and that one can hear about job memos from other workers without having to read them. At the beginning of class she indicated that she does not enjoy reading, almost never reads, is happy with her life, and has no further educational goals. While she accepted that "training" might be necessary for her job, she didn't feel employers should be involved with "education." Her voluntary participation in the class came with some reservations and only after she was recruited by a co-worker.

Carole: An electronics assembler in her mid-50's with experience at several stations on the assembly line during the past five years. Carole has graduated from high school and has previously taken some adult education classes to help her with a business which she had operated from her home. She is married with grown children and has regular child-care responsibilities with her grandson during the evening. Like Jeanne, she reported little in the way of literacy requirements for her current job other than end-of -day log reports, an occasional memo about changes, and the very infrequent need to read new procedures if she moves to a new station. She reported that sees herself as a reader, regularly reads newspapers, magazines, and novels to stay connected to the world, does letter writing, and helps her grandson with homework. She says she is generally open to training and took the class willingly.

Martha: An electronics assembler in her mid-50's with experience at several stations on the assembly line during the past five years. Martha returned to school after a 20-year absence to secure her GED as a requirement for obtaining her current job. She passed all but the mathematics portion of the test without any formal preparation and passed the math portion after some refresher training. Martha is married with one older child still at home and takes on regular child-care responsibilities with grandchildren in the early evening hours. She reported that her current job-related reading and writing was limited to log-sheets, an occasional memo, sometimes reading procedures to double-check something, and reading computer screens to calibrate instruments. She reported that she didn't see herself as much of a reader at home (though later data seem to contradict this) and that she didn't really know why she was in the class other than that they asked her to attend. She indicated at the beginning of class that she had no specific educational goals but felt she would have liked to do more with her education.

Municipal Services Employees: An urban municipality had recently restructured and down-sized many of its departments including municipal services (i.e., street repair, animal control, parking services, etc.). Many supervisors were being released, and non-supervisory personnel were being expected to take on some supervisory tasks. In such cases, workers were encouraged to take basic skills classes and/or pursue GED diplomas. In other cases, individuals were encouraged by union and management to take advantage of training so they could be more employable in the event they were released. Training was provided for 2 1/2 hours twice a week on employer time by a local Adult Basic Education program. From 7-15 workers voluntarily and sporadically (as jobs and interest allowed) attended sessions which focused upon literacy and mathematics basic skills as well as GED preparation. Two experienced, part-time teachers provided instruction using full class, small group, and individualized methods throughout each 2 1/2 hour class. Classes were supportive, but rigorous and demanding. Teachers as well as students who attended regularly attributed lowered attendance by other students to the demanding nature of class: "You can't just come in here, get a Coke, and get out of work." Though the class continued for twelve weeks, the first six weeks of class were examined for this study. Three learners predicted to have regular attendance were selected for case-studies. They were:

Leonard: An animal control worker in his mid-30's who also moonlights with a private security company. Leonard is married and has a three year old son and two school-age children. Leonard dropped out of high school and does not yet have his GED. His current job requires him to read laws on animal treatment and communicate that information to the public. In addition he has a variety of "paperwork" he needs to do daily to record dealing with animal control problems. He has previously faced reading requirements in OSHA classes on safety and anticipates soon going to Colorado for additional OSHA courses on wildlife rescue and icy water rescue. He also has a variety of reading and record-keeping demands in his second job as a security officer. Before attending class, he reported reading newspapers occasionally at home as well as some functional materials (i.e., bills, catalogues, and phone books to find information). He wants to get his GED and apply to become a police officer.

Alicia: A road-repair truck driver in her mid-40's who has previously worked as a "meter maid" and anticipated soon being transferred to a more lucrative position doing road repair (which is listed as skilled labor and receives higher pay). Alicia is single, owns her own home, and spends a good deal of time with her pre-school age grandchildren. In her meter-maid and truck-driver jobs she reported a good deal of paperwork requiring writing tickets, recording moneys collected, completing forms on vehicle status and materials usage, and using street guides. The higher paying job she aspired to and achieved half-way through class requires almost no literacy skills--it does require several hands-on skills which are learned on the job. At home, she uses literacy and mathematics skills to maintain her property, make careful consumer choices, and help prepare her grandchildren for school. Alicia thought volunteering for class would help her get a better paying job. She got the job part-way through classes, found it required fewer literacy skills than her previous job, and began leaving class early and attending less often.

William: A street-repair crew leader in his mid-50's who has recently been required to take a supervisory role in monitoring team performance and doing paperwork as a result of departmental restructuring. He had previously been responsible only for his own work. Now he must gather job orders, use maps and street-guides to arrange sequence of jobs, order materials, write up descriptions of problems and resolutions for each of several daily job-tasks, and turn in end-of day reports which are used as legal records and to monitor productivity. William has not completed high school. He is married with several adult children. Two school-age children still live at home. William sees himself as an older leader who encourages others to take and remain in classes since he believes workers

without skills are likely to be released. He hopes to take and pass the GED, is interested in any learning to help with his job, and requests materials to take home to help prepare for the GED. He had previously volunteered for a four-day management training class provided by his employer at a local university. At home he encourages and helps his younger children with homework, regularly reads the Bible, and encourages his older children to stay enrolled in college. He reports renewing a personal practice of writing down his thoughts in essay and poetic form.

Information Gathering Methods

Information was gathered for these case studies by using several methods. They are as follows:

Learner Interviews: Learners were interviewed two to three times during the course of the study about goals, sense of self in relation to literacy and learning, literacy practices at home and work, and connections learners saw between what was covered in class and their practices outside of class. These interviews were semi-structured.

Instructor Interviews: Instructors were interviewed at least twice about their goals, teaching methods including efforts to attain transfer beyond the classroom, and assessments of each of the case-study learners. After class observations, instructors were also sometimes interviewed to clarify questions and goals.

Co-worker and Family Member Interviews: When permission was granted by the learner and employer, co-workers and family members were interviewed about any changes they had noted in the learner since beginning the class. If literacy and basic skills practice were not mentioned, probes were used to focus attention in these areas.

Learner Weekly Practice Reports: As part of regular instruction, all learners were asked to keep weekly checklists of home and work basic skills practice (i.e. literacy and mathematics). Comments were encouraged. Checklists for case-study students were provided to researchers.

Classroom Observations: For the municipal employees and medical instruments firm employees, permission was secured for researchers to observe class sessions. During a six week period (often in conjunction with visits for learner interviews) classes were observed by researchers. Notes were taken on topics covered, teaching methods employed, and explicit attempts to make linkage and applications beyond the classroom. Special attention was paid to case study students focusing upon performance in full class discussions, groups, and individual work.

Examination of Teaching Materials and Student Materials: Researchers examined teaching materials and curricula used for classes. This included materials used on non-observation days. In classes that placed a good deal of emphasis on individualized learning, student folders and assignments were examined.

Data Analysis

Initially, notes from interviews and observations as well as materials analyses and learner practice reports were examined for data on instructional focus, learner goals, and external demands. These later became the expanded categories of instructional elements, learner predispositions, and perceptions of demand and opportunity.

To arrive at these expanded categories, researchers compared their initial classifications of mentions made in interview and observation notes. This led to the expanding of major

categories of the model and the creation of sub-categories within each category. A recursive process was used in which researchers jointly developed category definitions and applied these to the notes and data about which they were most familiar (i.e., had actually done interviews). Next, another researcher who had not been at that particular research site also placed a sample of interview and observation notes into categories. Sometimes a single comment might be placed into two categories (e.g., preparing to teach a Sunday School lesson might fit into the predispositions category as an interest as well as the literacy opportunity and demands category). There were initially a few disagreements between researchers, often related to understandings about terms. These were clarified, and decision-making rules were refined. For example, it was agreed that mentions of literacy practices or particular quotations might be allowed in more than one category and the potentially broad area of self-concept was limited to self-concept as a literacy learner. After working through these definitions and decision-making rules, agreement among researchers was high (usually 90% or higher). In cases where disagreement occurred, rationale for choices were shared and either consensus was achieved or the judgment of the researcher with most experience with a particular learner and workplace was given precedence.

Instructional Elements: An example of the expansion and modification of categories which occurred through discussion can be seen with the instructional elements category. Initially this category was "instructional focus," and concerned focus linked to home or workplace. As initial data were analyzed in light of learner interviews about the connection of instruction to transfer, learners reported several aspects of instruction which they reported important to their learning and transfer. The instructional focus category expanded to "instructional elements." Sub-categories within instructional elements became: 1) explicit links to home and workplace applications, 2) variety in format of instruction (full class, small group, individualized), 3) instructor modeling of literacy and communication use, and 4) rapport with learner.

Learner Predispositions toward Literacy and Learning: After the pilot study, this category had been simply the sub-categories of "goals" and "interests." Initial learner interviews revealed several comments relevant to learning predisposition which didn't fit into either of these categories. Examples of kinds of comments which didn't fit into goals or interests include remarks about one's own abilities, previous success or failure stories, and simply the presence of previous experiences related to course foci. A good deal of group discussion and analysis of initial learner comments led to the construction of the expanded major category "**predispositions**" with sub-categories of: 1) interests, 2) goals, 3) self-concept as a learner, and 4) previous learning experiences.

Perceived Literacy Demands and Opportunities: After the pilot study, interview and practice notes were analyzed for the presence of potential literacy demand indicators (i.e., recent job change; a child in school; club, church, or hobby responsibilities). Initial data made it clear that demand wasn't sufficient to explain all learner reports of literacy practice. Even when literacy wasn't demanded and could be avoided, most learners reported some literacy practices. What was required was an environment with literacy opportunity (e.g., available materials and tasks for which literacy might be an aid). A good deal of research discussion revolved around the philosophical point of whether an opportunity existed if the learner didn't perceive it. The final major category was "perceived literacy demands and opportunities," with sub-categories for 1) demands and 2) opportunities.

Changed Practices, Predispositions, and Perceptions: This category began using initial interviews and weekly practice logs as a baseline for determining increased literacy and basic skills practices which could be linked, in some way, to class participation. Again, this category needed to be expanded to also include changes which occurred in learner predispositions (i.e. goals, interests, and self-concept) as well as perceptions of demand and opportunity. Sometimes changes in literacy practices were accompanied or preceded by changes in learner perceptions which occurred as a result of class. Sometimes changes in learner

perceptions about self and situation were just beginning to occur as the data gathering was coming to a close. Such non-behavioral changes in attitude and perception were judged by the researchers to be important and worth noting.

(Insert Figure 1)

Case-by-Case and Overview Analyses: Data from multiple sources were compiled for each learner case under the categories of instructional elements, learner predispositions, perceived demands and opportunities, and changes in literacy practices, predispositions, and perceptions of literacy demands and opportunities.

Data were examined for positive and negative predispositions, demands and opportunities or the absence of these things. Next the researchers determined learner changes in literacy practice as well as predispositions and demand/opportunity perceptions as compared to beginning of class base-line data. Learner change scores were computed by comparing ratings for beginning practices, predispositions, and perception of literacy demands and opportunities with end of class ratings. The following scoring system was used:
2 = much change; 1 = a little change; 0 = no change; -1 = negative change. Learners were then placed in groups for later analysis based upon change scores: High change = 6-8 points; Moderate change = 3-4 points; and Low change = -1 to 1 point. No learners scored 2 or 5 points. See Figures 2-5 for more information.

Finally, researchers examined for patterns across all twelve cases with special focus upon differences between groups and relationship between instructional elements and changes.

Results

Results will be presented case-by-case, organized by work-site. An overview discussion of patterns across cases will conclude the presentation of cases.

Cosmetics Firm: Six learners participated in classes at the Cosmetics Firm. They are: Mike, Lorraine, Elizabeth, Wilma, Trang, and Rosetta.

MIKE: Before class Mike had a good deal going for him in terms of predispositions (i.e., interests, and previous learning experiences). He also perceived new literacy demands in the workplace, and several opportunities for practice related to his religion. In terms of negative predispositions, his negative self-concept as a learner and tendency to sometimes avoid new literacy challenges inhibited his growth. The combination of classroom activities and learning activities custom-designed for him by the instructor addressed the demands he faced while enabling him to overcome his negative self concept. As a result he has greatly increased his literacy practice and seeks out rather than avoids new opportunities as he continues to grow in literacy ability. An elaboration on how Mike's situation relates to the transfer model follows below.

Predispositions: Before entering class, Mike's interviews revealed several positive elements in the area of predispositions and a single negative element. He expressed several **interests** which could be linked to literacy. These were religion, the activities of his family, sports, and the mechanical aspects of automobiles. He was curious about how to interpret graphs posted in his workplace and his instructor reported an excitement when discussing world events-- especially in relation to his understanding of the Bible. Mike's **goals** upon entering the class were not very clear. He didn't really express any specific goals in terms of work or home literacy other than a general desire to get better. Mike's **self-concept** as a learner was somewhat negative. He reported being ashamed about his writing, his spelling mistakes, and his inability to do the fractions and other computations required for doing

paperwork for his job as a mechanic. He reported that this shame kept him from asking co-workers or others for help. He kept to the things he knew and felt threatened by changes which could embarrass him. His supervisor had described him as difficult. On the positive side, he took pride in performing well, whether as an employee, a parent, or a member of his church. The rich variety of **previous literacy experiences** he'd had as a result of his interests and of his military training were often mentioned or drawn upon as a basis for making connections with new learning.

Perceived Demands and Opportunities: The major new literacy **demands** reported by Mike related to his job. Like many workers at this firm, he was increasingly faced with quality monitoring paperwork as well as the expectation for contributing ideas in writing and oral form. Mike also faced a very specific new demand. He had been asked to join a team traveling to the West coast to examine new equipment and write up recommendations for design changes and possible purchase. The trip involved a wide range of additional new demands including filing travel and expense vouchers as well as examining blueprints, specification sheets and actual machinery in order to make his recommendations. He needed to function actively as part of a team in arguing his points and arriving at a group recommendation. Before class, the main literacy **opportunity** Mike reported taking advantage of was Bible reading for himself and to help him prepare to teach Sunday School.

Instructional Elements: Instruction came in a **variety of forms** (full class, small group, and individual). Classroom activities involved regular reading and orally expressing and sometimes debating opinions about current event newspaper and magazine articles, writing to solve problems **linked to workplace communication scenarios**, and doing mathematics exercises using samples similar to the measurement and productivity monitoring tasks of his workplace. Mike met regularly on an **individual** basis with his instructor and received homework assignments matched to his needs. These were often math and graph reading exercises, handouts extending class activities, and additional essays with reaction assignments. The instructor also encouraged students to engage in leisure reading and share it with her. There were no indications that **rapport** with the instructor was particularly positive or negative.

Changes: Data gathered as part of Mike's case-study reveal several changes in literacy practice, predisposition, and perceived opportunities. In preparation for the trip to the West coast, Mike's new **literacy practices** included calculator use, form filling, and reading paperwork associated with the trip. Mike brought some of his paperwork to the class for the teacher to check and reported with pride his successes. He reported, "I had to see that the right size gears were installed. I had a check-off list to make sure the spec. sheets matched the reality. We came up with improvement ideas." Mike even noted that the discussion and debate of current events issues in class served as a model for him to express himself in team meetings. As a result of class, Mike reports he now regularly reads and understands graphs depicting waste, downtime, mechanical error, human error, and bad scheduling. His supervisor reported he is reading repair manuals more often as part of his job and a co-worker notes, "Generally he has a lot **more self-confidence** and enjoys work more. He listens better to others. People who have known him for years say he's shown a night to day change." At home, he takes advantage of **more opportunities** to read and write for his own interest and to prepare for teaching and making speeches at his church. He has begun to work with his daughter on mastering the computer keyboard and generally feels he can accomplish whatever he sets out to do.

LORRAINE: The main factors influencing the positive changes in Lorraine's literacy predispositions, perceptions and practices were her promotion to quality technician, the resulting increased literacy demands, and the stimulus of the instructional environment of the class she attended. Together, these factors helped Lorraine turn an external demand into an

opportunity gladly taken. Lorraine accepted the challenge of her new job and went well beyond what was expected. In addition, she extended her new enthusiasm to home activities. It appears that the two events of her promotion to quality technician and her attending this class produced a sudden and very real thirst for education.

Predispositions: Lorraine's interviews indicated that, before the class, she had little **interest** in reading and was not comfortable with print materials. She kept workplace literacy demands to a minimum and rarely read at home. Although she gave no clear **goal** as a reason for starting this class, it appears to relate to her promotion and the increased job demands placed upon her. At the beginning of class, she did not reveal a **self-concept** of herself as a learner intent upon improving herself. It had been decades since Lorraine's **previous educational experiences** which she rarely mentioned as being either positive or negative.

Perceived Demands and Opportunities: The main new **demand** facing Lorraine was her recent promotion to the post of quality technician, in which she could no longer sidestep the issue of workplace literacy. In interviews, she reported that her new job involved much more reading, writing and computation. This included taking meeting minutes, writing standard operating procedures for job tasks, and calculating production statistics. Lorraine did not take advantage of home **opportunities** for literacy and didn't really perceive many such opportunities before class. She reported little reading beyond functional materials involved with paying bills and running a household. She read little for leisure or self-improvement and did not read to or with her children.

Instructional Elements: Instruction for Lorraine came in a **variety of forms**. Classroom activities involved regular reading, discussing, and sometimes debating opinions about current event newspaper and magazine articles. A good deal of instruction was **linked to the workplace**, such as writing to solve problems based upon workplace communication scenarios, and doing mathematics exercises using samples similar to the measurement and productivity monitoring tasks of the workplace. In addition, Lorraine developed strong **positive rapport** with her instructor and received individual special help with statistics. Lorraine's promotion to quality technician involved her in calculating averages and producing graphs of production defects. To assist her with this, the teacher bought a statistics book specially for her, gave her individual tutoring, and **modeled** the use of techniques she needed.

Changes: After attending class and in conjunction with her new job as a quality technician, Lorraine reported several changes in **literacy practice** at work and home. In interviews she reported a developing interest in graphs of production defects. Starting with the calculation of averages, she moved on, with the help of the class teacher and the statistics book ordered for her, to making her own graphs, tables and analyses of the manufacturing lines in order to find out the major factors causing defects. In this connection, she started taking work home to complete it—about 1 1/2 hours each day. Other work activities included writing her own job performance objectives, meeting minutes, and standard operating procedures. In all of these writing activities, she consciously employed techniques from the class, such as summarizing and recording the main idea. At home, she began reading more: books taken from class and newspapers (using new vocabulary from class) and reading aloud to her children (to help her pronunciation). Again she applied what she had learned in class (reading and answering questions to improve comprehension). These changed practices were strongly linked to changes in predispositions. Lorraine became much **more goal-oriented** and motivated at work, developing a personal **interest** in the production statistics she needed to analyze and putting in extra time on that work. She also **perceived** these new workplace literacy **demands as an opportunity** to widen her skills, both at work and at home.

ELIZABETH: Before the class, Elizabeth was comfortable with a wide range of reading and writing practices, both on the job and at home, and saw this class as an opportunity to improve her literacy skills. However, the change most visible to others (a co-worker and her daughter) was a much more considerate attitude to other people, developed from the class emphasis on communication and group problem-solving.

Predispositions: Interviews with Elizabeth showed that, before the class, she had a strong **interest** in reading and read extensively both at work and at home. At work, in her supervisory capacity, she read memos at the start of each shift to find out what the team would be doing, and then wrote daily reports and audits describing production details at the end of the shift. These demands were increasing, and Elizabeth reported a general **goal** of improvement in relation to these job requirements. She was aware of some personal reading and writing difficulties, but did not see them as major problems. She already had a good deal of **previous experience** with work reading, and her home reading was also substantial, including newspapers and non-fiction books. In addition to this work-site class, Elizabeth had enrolled in another training class at a technical school. She was confident, with a **positive attitude** about her ability to learn, and found the class to be non-threatening -- she was quite prepared to take this opportunity to improve her skills.

Perceived Demands and Opportunities: Although Elizabeth's job involved substantial reading and writing **demands** (mentioned above), with which she dealt competently, she was aware of some deficiencies in her reading comprehension and her grammar. At home, Elizabeth reported she regularly read the newspaper and occasionally read the Bible and used a dictionary. Her daughter reported in an interview that Elizabeth was "serious about improving" her writing and job performance and that Elizabeth saw the class as an **opportunity** to improve.

Instructional Elements: The **format** of class activities involved **a mix** of full class, small group, and individual activities. Many classroom activities for Elizabeth focused on various ways of communicating in the workplace and offered **modeling** and practice in written communication as well as functioning in groups (activities clearly **linked to workplace** applications). For example, the class read magazine articles relating to their industry (on teamwork, marketing, cosmetics, chemistry, etc) and wrote about these same topics. This activity sometimes led to structured class debates on, for instance, the value of competition between workplace teams and the role of a team leader. During interviews, Elizabeth did not indicate either strong positive or negative **rapport** with the instructor.

Changes: Because Elizabeth was already reading and writing a great deal at work, the amount of her workplace literacy practice changed little. However, there were a few signs of change in literacy activities away from work. Her daughter noted that she was **reading more at home** in order to improve her comprehension and reading more seriously: "reviewing her lab books to take an exam next month". But the most significant change, noted by both a co-worker and her daughter, was that she showed a much **improved attitude** when dealing with other people. Both reported her showing greater consideration for others. The co-worker reported that Elizabeth was more concerned about other crew members' opinions and suggestions. Her daughter said that she listens more closely and respects other opinions ("Before she had the assumption if you don't do the job nor have any knowledge of the job don't tell me anything.") and that she is more willing to explore new ideas and ways. Such attitudinal changes parallel the emphasis in class on workplace communication and cooperative problem-solving, including preparing for and participating in class debates and discussions. This workplace communication emphasis also revealed Elizabeth's **changed perceptions** of job demands. Typical of the way that she saw job demands as opportunities for improvement was the fact that she voluntarily began reading a team development book entitled: Understanding Group Behavior.

WILMA: Wilma reported no new demands on her workplace literacy skills and no reason to increase her already extensive home literacy interests and practices. She did little reading at work and all of it was familiar to her, but she read broadly at home and also wrote poetry. While she reported enjoying the activities in class, they seemed to present no perceived opportunity for change and left no lasting impression on Wilma. It seems that Wilma had a well-developed literacy life outside the workplace and little to challenge her at work. Because of this lack of stimulus to change her literacy habits, it appears that Wilma was not much affected by attending the workplace class, in either practices or attitudes.

Predispositions: Wilma seems to have had no particular **goals** of her own for attending this class; it is possible she attended because it was suggested to her by her supervisor or a co-worker. On the other hand, in interviews Wilma indicated a **neutral to somewhat positive attitude** toward class-- attending was not a threat to her in any way. She felt comfortable with her literacy abilities and took this new event in her stride. She already used literacy on a daily basis to satisfy many of her **interests** about the world, current events, entertainment, and keeping up with new trends. Wilma's extensive **previous home experiences** with broad reading and writing ensured that the essay and current events reading and writing in class were somewhat familiar to her.

Perceived Demands and Opportunities: Wilma reported little reading at work (e.g., only bottle labels, materials lists, component sheets), and all of it was familiar to her. Therefore she perceived no **demand** to raise her skills on the job. At home, she read extensively in newspapers, several magazines, several catalogues, cook books, and whatever was available. In addition she reported that she had for years regularly written poems. In an interview, her adult daughter reported, "My mother reads, writes, and uses math every day since I can remember when I was a kid. My mother has a pen or pencil in her hand all the time." Her daughter also indicated that her mother did not perceive the workplace or the class as presenting much challenge to her or **opportunity** for change.

Instructional Elements: Wilma attended the same class as Elizabeth. The **format** of class activities involved **a mix** of full class, small group, and individual activities. Many classroom activities focused on various ways of communicating in the workplace and offered **modeling** and practice in written communication as well as functioning in groups (activities clearly **linked to workplace** applications). The class read magazine articles relating to their industry (on teamwork, marketing, cosmetics, chemistry, etc.) and wrote about these same topics. This sometimes led to structured class debates on, for instance, the value of competition between workplace teams and the role of a team leader. Wilma participated and did what she was asked including homework, but indicated neither positive or negative **rapport** in relation to instructors or topics covered in class.

Changes: Wilma's interviews and those with the instructor revealed only a few changes in her **literacy practices** and only a few changes in **perceived opportunities** either at work or at home. The range of her workplace reading remained in the area of the familiar: bottle labels, materials lists, component sheets. In later interviews, she did report sometimes reading about new job openings. Her home activities were already extensive, including newspaper and magazine reading and writing poems. The only change that she mentioned was, "I read a lot of children's books lately, to my grand-daughter." In addition, her daughter indicated that when doing math homework problems, Wilma seemed more able to do them without asking for help. Wilma's **predispositions** (goals, interests, and self-concept) remained essentially unchanged with the possible exception of looking at new job notices which could possibly precede a goal change. The overall picture, then, is one of comfort with her present range of activities and no strong interest in changing.

TRANG: As a relatively recent immigrant, Trang wanted to improve his English and saw this class as an opportunity to do so. His stockroom job demanded little reading or speaking, but he saw a need outside the workplace for better English in everyday communication and to help his children with their schoolwork. Class activities included oral and written English, with applications to both work and home. However, Trang's opportunities to use English in the workplace (through the nature of his job and his own choice not to engage in breaktime conversations) were very limited, and so he demonstrated little workplace change. In contrast, he used what he had learned to considerable advantage for home activities such as monitoring children's schoolwork.

Predispositions: Trang's major **goal**, as reported in interviews, was to improve his English and subsequently his life-situation. As a multi-lingual, highly educated person, Trang reported **several interests** including the economy, world events, and the progress of his children. He reported enjoying discussion about the world situation and the economy but had little opportunity to keep current or discuss ideas since most available opportunities were in English. Trang had a **positive attitude** toward learning and a good deal of confidence about himself as a learner. This positive attitude and confidence is directly related to his noteworthy **previous successes with education**. In Thailand he had learned both French and Russian, and he holds an economics degree. He was also knowledgeable about what he was lacking (i.e., opportunity for sufficient practice) in order to improve in English.

Perceived Demands and Opportunities: Trang indicated he saw **few workplace demands** for English. He reported very little daily reading at work, and his smoking habit forced him to sit away from English speakers during break times. Trang did indicate taking advantage of a few **opportunities** to read work-related production graphs and machine manuals out of interest. Both these formats were accessible to someone with little English. Trang did report taking advantage of multiple literacy **opportunities at home**, where he read parts of newspapers and magazines, sometimes alone and sometimes with the help of his sister. He reported reading aloud with the older children and checking their homework. He tried, with the help of his sister, to meet the literacy and paperwork demands presented by dealing with the government and other bureaucracies. Trang's interviews indicated he clearly understood the **class itself was an opportunity**. To master his fourth language, he needed more English practice as well as opportunities to ask English speakers about words. He saw the workplace class as such an opportunity to acquire more effective English skills, particularly oral skills such as pronunciation and conversation.

Instructional Elements: The class that Trang attended contained many ESL speakers and focused on English grammar, pronunciation, spelling, reading, writing and discussion. Like other classes at the cosmetics firm, this one used a **mix of formats** (i.e., full-class, small group, and individualized). Some exercises could be done on the computer. Language topics clearly **linked to Trang's goals and needs** and some activities in the classes moved on to **workplace applications,** though few links were made to Trang's daily job. Activities included reading comprehension exercises, writing descriptive paragraphs, conducting class debates and basic math exercises using fractions, percentages and graphs. Trang's **rapport** with the instructor was neither strongly positive or strongly negative. He did regularly take home materials and assignments, including some GED preparation materials.

Changes: Trang's job as a stock worker involved little reading, and he showed only a **little change in workplace literacy practices**. He reported once having to substitute as a back-up machine operator, which required simple recording paperwork (i.e., downtime record sheet, hourly sample sheet, and typing recording information into the computer). He indicated that experience with the Learning Center's computer helped. He spoke English very little in the workplace and so practiced it mainly in class. Trang commented, "The classes are the only place I speak much English. They are important." Consequently, the

changes in his English proficiency showed effects **mainly at home**. He took home books from the class. His practice of reading the children's homework with them increased a bit as he reported sharing with them his own homework readings. After taking home a GED practice book, Trang reported to his instructor a **possible new goal** of taking the GED test when he knew more English. His wife noted that he now needed less help from his sister: "Right now he can take care himself. That means he has made a lot of progress in English." Trang's goals may have expanded slightly with consideration of the GED as did his perceptions of language opportunities. For the most part, Trang's main changes appear to be in slowly increasing English language competence demonstrated by some changed practice at home.

ROSETTA: For the previous 2-3 years, Rosetta had attended classes at the workplace which emphasized ESL instruction. She had recently been promoted to machine operator, which required her to attend production meetings, use the computer, and do more English paperwork. In addition to having workplace-related goals and literacy demands, Rosetta reported a variety of home interests which she already addressed using Spanish literacy. During the course of the class, Rosetta reported significant improvements in home and workplace English language and literacy use as well as a strong improvement in her confidence as an English user.

Predispositions: Rosetta saw improving her moderate command of English as a definite **goal**, both for work and home. She attributed her moderate level of English mastery to her **previous class experiences**: "Class helps a lot." For her current class, she reported clear **goals** related to workplace oral communication (e.g., speaking in meetings) as well as everyday reading and computer use for her job. In addition to her **interest** in doing her job better, Rosetta pursued many home and self improvement interests in Spanish. She read Spanish versions of the Bible, a book on scientology, and Spanish/English versions of the Reader's Digest for the current events and human interest stories. Her **self-concept** as a speaker of English was relatively weak at the beginning of class. She indicated she had improved somewhat from previous classes, but that she lacked confidence in her use of oral and written English.

Perceived Demands and Opportunities: In connection with her relatively new job as machine operator, Rosetta perceived a number of **demands**. She needed to read production orders and write down-time sheets, but, more importantly, she needed to communicate orally with co-workers and supervisors. She saw the class as an opportunity to meet these demands. At home she perceived several **opportunities** for improving her English use. These mainly related to improved English reading comprehension as well as extending to English her current Spanish literacy practices with the Bible, magazines and books.

Instructional Elements: Like Trang, the class that Rosetta attended contained many ESL speakers and focused on English grammar, pronunciation, spelling, reading, writing, and discussion. Like other classes at the cosmetics firm, this one used a **mix of formats** (i.e., full-class, small group, and individualized). Some exercises could be done on the computer. Language topics clearly **linked to Rosetta's English goals and needs** and some activities in the classes moved on to **workplace applications** which also linked to her goals and daily application needs. Activities included reading comprehension exercises, writing descriptive paragraphs, conducting class debates which required orally presenting ideas based on reading in English. Rosetta's **rapport** with the instructor was quite positive, both as a result of this class and several positive previous classes.

Changes: Rosetta reported only a **few literacy changes related to her job**. She used the computer more confidently, partly as a result of computer use in class. The limited literacy demands of her job (mainly recording information) provided limited opportunities. She

reported more **workplace changes in oral language**. Both she and co-workers indicated she had begun to talk in meetings. She reported that she knew English enough to be aware when her supervisor was joking with her, after she became confident enough to ask, "Why he was so mean to me?" **At home**, she made much **greater improvement** in reading. Rosetta **created many more opportunities** for using English. She reported that she had read a book in English for pleasure. "It's called In God We Trust. It's easier than I thought it would be. It's the first book I've read in English all the way through." In class, she read simple English news stories from News for You. At home, she went on to read women's stories in the local newspaper and looked for vocabulary in the Sunday paper. She later reported going to the library and getting two books by Norman Vincent Peale, which she read in English. She even checked out and used an English book on sewing when she couldn't find one in Spanish. During an interview, she enthusiastically reported, "I realized just last week that I'm thinking in English much more. For the first time ever, I found myself praying in English! I stopped I was so surprised." She reported listening to Oprah, "and now I can understand most of it." She looks up words she doesn't understand and keeps a pen and paper handy to write down words from the screen. She indicated she knows she is now making a bigger effort to read and speak English, "and I can see results now. It surprises me sometimes all I've learned." Rosetta's goals and interests, especially at home, continued to expand in English. Her confidence is greatly improved and she seeks out new opportunities to use English in her personal life. She continues to see improvement in English as important for both work and home.

Medical Instruments Firm: Three learners from a procedures reading and writing class at the medical instruments firm participated in the study. They were: Jeanne, Carole and Martha.

JEANNE: Jeanne began the class seeing herself negatively in relation to literacy--especially on tests. She also reported herself comfortable with her present reading ability. She read very little at work and performed mainly functional reading related to her family at home. Jeanne reported small improvements in the concentration she brought to reading and reported slightly more confidence in her reading. There was no noticeable increase in the range or amount of what she read.

Predispositions: Jeanne's **self conceptions** with regard to herself as a learner were mixed. In literacy-dependent contexts, Jeanne identified herself in interviews as one of the "dumb ones" and as a person with "low ability," preferring not to take a class than to risk the humiliation of not passing a test. On the other hand, she indicated clearly that she is able to learn hands-on skills. It is passing a written test that is a hurdle for her. At the same time, she indicated that she was comfortable with her reading ability by saying in interviews, "I can read really good. I have no desire to just sit down and read something." Her **literacy related interests** were largely limited to her family, linked to normal, everyday tasks of making lists, writing checks and writing notes to family members, as indicated both in interviews and on checklists of actual activities. In interviews she said that she didn't do much reading. She didn't care for novels, didn't read magazines and rarely read the newspapers. Checklists substantiated this except that they show her reading the newspaper once or twice a week fairly regularly. What is not clear is whether this is a changed behavior. Jeanne did not have a great deal of **previous literacy experience** to draw upon. She **had no further educational goals** and said that her main purpose in being at work was to earn a paycheck and not for education. She said she was quite happy with her life as it is.

Perceived Demands and Opportunities: Jeanne did not perceive that reading and writing are important **demands** on her job: "You don't have to read your procedure every day because once you know it, there's no sense in going back to it." She also indicated that she was already certified on all jobs on the line so that it wasn't necessary to read the procedures unless they are revised. The only writing she did was to fill out log sheets at the end of the

day. Co-worker interviews confirmed these observations. Jeanne perceived no new external literacy **opportunities** at work or home during the course of the class.

Instructional Elements: Classes met twice weekly for two hours each time and included a **mix of formats** (large group lecture and discussion and small group and individual work). Instruction was highly focused on procedure reading. The instructor utilized familiar procedures and materials brought from home as well as procedures from the workplace in an attempt to make **links to daily use**. Observations in the classroom indicated that the instructor used many opportunities to link the instruction to the learners' lives, both formally and informally: "You have a new car? Have you set the car radio yet?" In addition to the work on procedure reading, each learner was encouraged to pursue an area of personal interest in which to do some reading each week. Some class time each week was devoted to writing about personal projects. Jeanne's reported project was to develop a flower garden, though not much reading related to this project appeared on her weekly practice checklist. Aside from this personal project, there was little individualized instruction. Jeanne's **rapport** with the instructor and class can best be described as neutral. The main form of **modeling** received from the instructor was during class demonstrations.

Changes: Jeanne's interviews indicate few changes in literacy practice, but a sense of some improved ability: "I concentrate more as a result of the class," and "Since starting class, I pay closer attention." There was also a changed perception, "I have a little more confidence doing things myself." She reported that she helped read the instructions on a new cordless telephone. While her husband set up the phone, she looked up the memory function.

CAROLE: Carole had strong predispositions toward reading and learning and a real perception of the usefulness of the class. She was able to see the link between instruction and applications she perceived both at home and at work. As a result, Carole seemed to benefit from the class, using her new skills for reading procedures and a variety of other materials she uses routinely.

Predispositions: One of the most positive aspects of Carole's **self- concept** is that she thinks of herself as a reader and indeed indicated in both interview and checklists that she has had several **previous and continuing literacy experiences**. She reported reading novels, magazines, and newspapers regularly, helped her grandson with his homework and her elderly mother in-law with a variety of tasks including banking and paperwork, and participated in study groups at her church. In addition to these **interests**, she said that reading is her link to the world. In the past, she has taken courses to learn skills which she utilized to build a home-based business. In an early interview she said that she has no current plans or **goals** related to additional training or education, either at work or home.

Perceived Demands and Opportunities: Carole clearly saw the worksite class as an opportunity. She indicated not only that she volunteered for the class, but talked her friend into attending as well. Her checklists indicate some work-related literacy **demands**. Carole read procedures once or twice a week. She also reported reading work related memos and newsletters each week. Writing demands were for daily log sheets. In interviews, Carole seemed to indicate a real understanding of why the procedures exist and why they are changed even for temporary conditions. At home, Carole took advantage of a much wider range of literacy **opportunities** (which were listed above) than she did at work.

Instructional Elements: As described with Jeanne, the class contained a **mix of formats**, formal and informal **links to daily procedure reading** at home and work, and a chance to develop an individual project. Carole chose to gather information for a trip to the Smoky Mountains, which she added to her list of home reading tasks. Carole's **rapport** with the

class and instructor was positive. The **modeling** she received was through full class demonstrations and discussions for procedure writing.

Changes: Carole experienced a number of changes as a result of taking the class. Not only did she indicate in interviews that class training helped her to read procedures at work more effectively, she reported taking advantage of several new literacy **opportunities**. She read instructions for the VCR, whereas before she would have let her husband do it. She found a problem with the thermostat on her furnace by reading the manual. She also set the channel selector for a new television set, using the instruction manual. Carole also reported trying to use the methods she was learning in class to read a variety of other materials and felt that it helped her to get more information from newspaper articles and to understand her novels better. Her self-concept as a learner remained strong and her literacy-related interests relatively broad.

MARTHA: Before class began, Martha was comfortable with reading to learn and to follow up interests and also comfortable reading procedures. Although she saw a need for reading procedures at work and took the class willingly, she didn't think she needed the class. Martha perceived only a very modest change in her ability to focus on particulars in procedures and made few changes in her literacy practices or predispositions.

Predispositions: Martha's strongest literacy-related predisposition is in her **self-concept** as a learner. In interviews, Martha indicated that when she wants to make something or learn something new, she just gets information and does it. She says that she didn't do a lot of reading, but further probing revealed that she demonstrates several literacy **interests** at home. Her weekly checklists revealed that she reads books occasionally, magazines and newspapers regularly, reads to learn and to follow up interests, and reads to her grandchild. She reported that these were activities she had engaged in before. In addition to these **previous general literacy experiences**, Martha has had several experiences directly related to procedure reading. Whenever Martha wants to do something that requires a procedure, such as using a sewing pattern or cooking from a recipe, she reported that she reads the entire procedure through before starting, to make sure that she has everything and understands what she is to do, then starts at the top with the first step. Although Martha said that she would have liked to have done more with her education, she did not indicate having any current educational **goals**.

Perceived Demands and Opportunities: Unlike Jeanne, Martha perceived a **demand** for reading procedures at work. In interviews, she indicated that she read procedures if she changed jobs, if the procedure changed, or just to double check. Her co-worker agreed and noted that this was usual behavior for Martha. Both, however, agreed that it might not be necessary to look at procedures every week. Other work related reading tasks that Martha identified on checklists included the computer screen (during calibration), occasional memos and newsletters, and insurance information. Writing demands were primarily completion of daily log sheets including calculation of amounts. As indicated above, Martha takes advantage of a wide variety of literacy **opportunities** at home.

Instructional Elements: As described above, the class contained a **mix of formats**, formal and informal **links to daily procedure reading** at home and work, and a chance to develop an individual project. Martha chose to gather information for a tourist visit to Arizona, which she added to her list of home reading tasks. Martha's **rapport** with the class and instructor was neutral. She didn't really see the need for the class. Since she already seemed capable in procedure reading, **modeling** was irrelevant to her.

Changes: In interviews, Martha noted few changes in predispositions, practices, or perceived opportunities. She did indicate that she notices more when reading procedures.

Municipal Service Employees: Three municipal workers from the class at the basic skills center participated in case studies. They are: Leonard, Alicia, and William.

LEONARD: Before class, Leonard had several positive predispositions to support his learning and transfer. He was goal oriented (i.e. obtaining a GED), had a strong and disciplined work ethic, and had succeeded with a variety of literacy tasks on his two jobs and during previous training. On the negative side, he didn't enjoy reading or see himself as a reader. Leonard had mastered many literacy demands as part of his job. The major new demand he faced was passing the GED so he could apply for a new job as police officer. In terms of literacy opportunities beyond demands, Leonard did not seem to perceive or at least take advantage of many beyond some story reading to his son and occasionally reading a single newspaper story. The combination of rigorous class work, self-chosen homework, and positive treatment and feedback from teachers has led to significant changes in Leonard. He reads a good deal more at home and work, seeks out opportunities to read and learn, and has come to enjoy reading and learning to the point of wanting to extend this pleasure to his family.

Predispositions: Perhaps the strongest predisposition demonstrated by Leonard at the beginning of his studies was a clearly stated **goal** of obtaining his GED diploma so he could apply to be a police officer. He restated this goal in each interview. His instructor reported him to have perfect attendance, to be the hardest worker in class, and to regularly request homework assignments. Leonard mentioned few non-GED related **interests** other than a desire to make sure his three-year-old son did better in school than Leonard had. Leonard's **self-concept as a learner** was mixed. He reported himself not much of a reader, though he did occasionally read the newspaper. He did, however, see himself as a hard worker who held down two jobs and who could focus on getting jobs done right. In terms of relevant **previous experiences**, Leonard had already taken some safety training classes as part of his job as animal control officer and felt he had done well. Both his jobs required reading, paper-work, and communicating to others, and Leonard felt he had mastered these tasks.

Perceived Demands and Opportunities: The largest **demand** which Leonard perceived was the demand to obtain the GED before he was eligible to be a police officer. Every interview and reports from instructors indicated this perceived demand was central to Leonard's perfect attendance at class. He was willing to do other assignments, if asked. Leonard's interviews and learner practice sheets indicated he was aware of and regularly completed a wide range of reading and mathematics demands as part of each of his jobs. These included training materials for OSHA courses, the regular appearance of new forms and paperwork, laws and policies on animal control and treatment which he was expected to explain to the public, as well as regular record keeping demands like end-of-day task descriptions, payroll forms and time sheets. At the beginning of class, Leonard mentioned few **opportunities** for literacy and basic skills practice at home other than some story-reading with his three year old son, which Leonard did in spite of the fact that he reported himself to not enjoy reading very much.

Instructional Elements: Each 2 1/2 hour class session was a **mix of instructional formats** (i.e., full-class, small group, and individual activity) directed by two different instructors. A typical full-class presentation involved a teacher demonstration (e.g., how to organize and write essays for the GED), individual practice, and small group exchange and feedback with the instructors also providing feedback. In addition, each individual had at least an hour of individual practice and meeting time with instructors during which homework was encouraged and individualized assignments were developed. Leonard reported **good rapport** with both instructors and they each reported liking him and seeing him as the hardest working member of the class. Leonard was reported to always ask for

extra work to take home. This was usually GED practice exercises, but instructors reported him equally willing to attempt other current events reading tasks. Class discussion regularly asked students to **make links and applications** of mathematics and writing in their daily lives. Leonard was able to make links to his past experience (e.g., math at the gambling casino and credit card finance charges), but was even more successful in finding new opportunities to apply what he was learning. Leonard volunteered that he liked the way teachers treated him and other students. This included both the solicitation of his ideas in class discussions and also the individual **modeling and feedback** he received when working one-on-one with teachers. He indicated later that this had taught him a new respect for learning and that he attempted to emulate this when reading or writing with his son.

Changes: Leonard's interviews and learner practice sheets indicated an increase in his literacy **practices** and **perceived literacy opportunities**. He reported reading instructional booklets to assemble a child's toy rather than simply attempting it by trial and error. When he has to cook for the family, he now reads ingredients and directions instead of just preparing dishes he knows. This increase in practice is building a larger knowledge base and helping to **change Leonard's self-conception** to someone who now enjoys reading. He reported, "I now read the newspaper more than I ever read it. Before I wasn't interested, and as I read more, I get more interested." Similarly, in the workplace his weekly practice sheet and interviews indicate increased making of lists as well as reading newspapers and work material in search of new vocabulary. He now does crossword puzzles in home and work publications and indicated during an interview, "I've learned more words so I fill them in. I have learned to enjoy doing all the word puzzles." Leonard derives a good deal of pleasure from the skills mastery he perceives as a product of his homework and work in class. This pleasure in accomplishment and learning is an important change since it can lead to continued transfer beyond Leonard's goal of obtaining the GED. Leonard began with a strong work ethic, which he applied to learning and achieving his goals. By the final interview, he was enthusiastic about how positive the teachers at the center made him feel about learning and said that this was one of the reasons he intends to work continuously with his son.

ALICIA: Before class, Alicia's predispositions for learning were built upon practical goals for economic self-improvement and the belief that getting a GED would help her with employment. Her interests (i.e., home improvement and job search) matched this goal. Alicia's self-concept as a learner was clear and strong, partly as a result of being economically self-sufficient and having successfully mastered several jobs in both formal employment and home repair. Literacy demands on the job had been moderate, and her perception of literacy opportunities was limited to getting a GED as a path to economic improvement. Part way through the course, Alicia got a higher paying job with fewer literacy demands than her previous job. Her class attendance dropped significantly, and she sometimes left early. When she was present, she paid careful attention and asked questions--especially when instructors used examples linked to jobs or home economic use. By the end of the period of this study, Alicia's work literacy practice decreased while she increased slightly in perceiving and using more home opportunities for literacy and basic skills.

Predispositions: Alicia reports several **interests** which are potentials for literacy use, and all are directly related to practical applications of literacy for improving her economic situation. She owns her own home and enjoys maintaining it, shopping for bargains related to her home, and even considers buying and fixing up another home. She reports a long and regular interest in improving her economic situation through job change. For years, this has involved reading job postings and shifting to more lucrative jobs. This job-search interest led directly to her stated **goal** for attending class. She reported, "Getting my GED might improve my career. I look at some of the job announcements, and they require a degree." Alicia's **self-concept** as a learner is strong and clear. During interviews she reported that she

preferred choosing what she wanted to learn, watching someone else do it, and then trying herself. This pattern was confirmed in class observations where Alicia spoke little in group activities but watched others with extreme care, occasionally asking questions for clarification. She also reports this preference for a modeling approach on the job. "As I was on the job, I saw things I wanted to learn like the loader, grinder and grader, then I got people to show me." Parallel with this self-conception is the sense that Alicia in not particularly interested in learning anything for which she can't see a practical use. Alicia's **previous learning experiences** using this approach have been generally successful. She has learned and held several different jobs and taught herself a wide range of homeowner skills.

Perceived Demands and Opportunities: The actual literacy demands faced by Alicia were moderate in her jobs as truck driver and meter maid. These jobs required record-keeping, form-filling, some computation, and some math reading. Her perception that she would need a GED to get a higher paying job suggested increased demands at the course beginning. (The Changes section of this description explains that this turned out to not be true). Taking care of her home involves some use of manuals, comparison shopping, and reading of product directions. At the beginning of class, Alicia reported few literacy practices and perceived **opportunities** beyond the home fix-up sort. She read the newspaper mainly to check lottery numbers. Though she has a fifteen-year-old at home and reported playing with grandchildren, in early interviews she reported nothing related to education and these children.

Instructional Elements: Each 2 1/2 hour class session was a **mix of instructional formats** (i.e. full-class, small group, and individual activity) directed by two different instructors. A typical full-class presentation involved a teacher demonstration (e.g. how to organize and write essays for the GED), individual practice, and small group exchange and feedback with the instructors also providing feedback. Alicia had the highest absence rate of any learner in these case studies, so actual participation in these activities was limited. When she attended, she was involved as indicated by intense attention, question asking, and the ability to discuss accurately with the interviewer the sense of what had been covered in class. Unlike some learners, Alicia had little to say about instructors. Her **rapport** appeared to be neutral, perhaps because she did not derive her motivation from teacher presentation or feedback. She did appear comfortable in asking questions to seek out **links** between learning and her personal situation. Instructors encouraged this through use of realistic examples when teaching some course concepts. For example, percentages were taught using credit card and mortgage interest rates as well as computing discounts. Estimating materials needed for street patching or other construction projects served as examples for simple algebraic formulas. In such situations (e.g., computing credit card interest), Alicia attended carefully to instructor **modeling and explanations** for how to complete tasks and use information.

Changes: Alicia's **goals** and interests changed somewhat during the period of this study. Part way through the course, she moved to a more lucrative job doing actual street repair. She learned that a GED was not required and that literacy was demanded less than on her previous jobs. Even training was reported to be completely "hands-on." Her **interest** and attendance at class diminished (partly due to a desire to be present more often on her new job), though she did report still being generally interested in the GED. Her self-concept as a learner remained strong. At the same time as on-the-job literacy **demand** and **practice** decreased, Alicia reported slightly more home basic skills practice and perceived **opportunities**. She reported to the instructor she now intended to charge her siblings (who regularly borrowed money from her) interest for loans. She reported applying new math concepts from class to home remodeling projects and specifically indicated she had not done this before. She examined the newspaper for home mortgage rates with thought of possibly buying another fix-up home and applied the computing of discounts to newspaper comparison shopping for a TV and a futon. Though early interviews indicated only playing

with grandchildren, later interviews indicated Alicia had begun helping a grandson learn his ABC's and counting for kindergarten.

WILLIAM: Before class, William had several strong self-improvement goals and interests and participated in several home-literacy activities with his family and for personal growth (Bible reading, general reading, homework with his children, poetry writing). This drive toward self-improvement along with new workplace literacy demands resulting from his recent promotion to crew leader led to his volunteering for the class. In interviews, he appeared to embrace with enthusiasm nearly everything covered in class. He regularly requested and did homework assignments. He reported several examples of using at home and at work skills and ideas he had recently learned. William even transfered to his own use some of the teaching and interpersonal skills he saw his instructors model.

Predispositions: William reported a wide variety of **interests** and literacy **goals** which he had possessed for many years. He stated during interviews, "I read for a sense of self and to keep up with changes." His strong sense of self extended to an enjoyment of literature and a former practice of writing simple poetry and short essays on his thoughts. He read about his health and reported his progress in changing his diet and developing an exercise schedule. He stated, "It's a challenge to give up something I like for control over myself." He was interested in improvement for himself and everyone around him-- his children, his work-crew, and humanity in general. He reported a regular pattern of Bible reading and sharing with his children. "I like Proverbs. I read with the children and tell them real things like Samson and Delilah and his unbelievable strength. They need spiritual strength. Kids today at school are faced with things like drugs and alcohol." Upon entering the class, William added two goals to his already long list: the goal of improving his literacy abilities at work and possibly getting his GED diploma. In addition to being able to draw upon a life-time of **previous literacy experiences**, William reported that he had successfully completed a recent four-day management training class on motivating teams sponsored by his employer at a local university. The instructors and researchers both judged that William's **self-concept** and attitude about himself as a learner were among the strongest of anyone with whom they had worked.

Perceived Demands and Opportunities: William reported that his promotion to crew leader had brought with it several **new literacy demands**. As crew leader, he needs to gather work orders, read maps, organize the order of street repair jobs, order repair materials, write up brief descriptions of what transpired for each task including new problems and resolutions, and compute worker time per job. During an interview, William had been impressed and concerned that these write-ups served as legal records. He also stated, "I didn't feel I could do everything as well as others, and jobs being what they are-- others have high school degrees and they could be after my job." William also indicated he felt responsibility for the work of his team now that he was a crew leader and felt a demand to motivate his team and get them to see the job differently. At home, William saw nearly everything as a literacy and learning **opportunity**. He already read to and with his children and reviewed with them their homework. He reported a past history of writing for personal enjoyment. His active pursuit of self-improvement led to reading magazine information on personal health, seeking spiritual guidance from the Bible readings, and constructing his own personal spelling lists. William was able to recount enthusiastically his personal application of nearly every new skill he had learned in class and discuss long range plans to prepare for and obtain the GED.

Instructional Elements: Each 2 1/2 hour class session was a **mix of instructional formats** (i.e., full-class, small group, and individual activity) directed by two different instructors. A typical full-class presentation involved a teacher demonstration (e.g., how to organize and write essays for the GED), individual practice, and small group exchange and

feedback with the instructors also providing feedback. Reading and discussion topics often came from a book of essays or from newspaper articles found by instructors and students. Mathematics activities **linked to workplace and home use** the study of percentages, fractions, and decimals. Examples included comparison shopping, use of discounts, computing interest, and converting fractions to decimals for a variety of workplace applications. In separate interviews, both William and the instructors reported **strong rapport**-- words and facial expressions indicated they really liked and respected each other. In addition to taking a leadership role with other students in class, instructors reported that William regularly requested special homework assignments (related to the GED). William indicated that a large part of the strong rapport had to do with "how they treat people." He liked that they asked questions rather than told people what to do and that each instructor was a good listener. In fact, as the Change section will discuss more fully, he borrowed the behaviors these instructors **modeled** for his own use with co-workers and family.

Change: William changed and **expanded his literacy practices** in several areas. At work, he reported that he did paper-work in more detail and was able to do it briefly between jobs in the truck. Previously he indicated that the only way he could think to write was to sit quietly for a long time. In addition, he was now able to convert fractions to the decimal format required by his job. At home, he perceived new basic skills **opportunities** and applied many of the lessons he had learned. He reported that he now computes mileage for his personal automobile each week-- an extension of class activities. During homework time with his children, he helps them write in complete sentences, just as covered in class. He now comparison shops and computes discounts whenever the opportunity presents itself. "I find discounts interesting. I like the computation." His recording of weekly practice and interviews indicated a good deal of home time was spent on GED homework assignments and self-constructed study (e.g., spelling lists, math exercises). In addition, William reported reviving his former habit of writing poetry and putting his thoughts down on paper in essay form. William's wide **interests** and **goals** as well as his strong **self-concept** stayed essentially the same, only expanding slightly as a result of his reading. He reported that his GED plans were a bit more definite. William also reported borrowing behaviors **modeled** by his instructors during teaching. For example, in relation to his job, William reported borrowing teacher questioning and discussion techniques. He said, "I've learned to do it with people; for example, my people couldn't do some part, but I get their input and now by being a good listener, I get them to contribute. When I was off, before, people didn't want to take responsibility, but I've learned to motivate them." Also, "When I talk with the guys, I remind them they should practice because when you don't you lose stuff." Similar lessons were applied to William's work with his children.

Discussion of Patterns and Implications

Once ratings for pre-conditions and change scores were arrived at, learners were grouped by degree of change each had demonstrated in: 1) literacy practices at home and work, 2) predispositions (i.e. learning goals, literacy related interests, and self-concept as a learner), and 3) perceived literacy demands and opportunities. A total of twelve points was possible for "much change" in every area. Learners demonstrated the following change scores:

High (6-8 points)		Moderate (3-4 points)		Low (-1 to 1 point)	
Mike	8pts	Elizabeth	4pts	Wilma	1pt
Lorraine	7pts	Trang	4pts	Jeanne	1pt
Rosetta	7pts	Carole	3pts	Martha	1pt
Leonard	7pts			Alicia	-1pt
William	6pts				

(Insert Figure 2)

Next, the pre-condition scores of learners by groups was examined. These are listed on Figures 3-5, below. Scores are listed for each learner's pre-conditions in each area of the model, including instructional elements (i.e. variety of instructional format, link to home and workplace use, rapport with instructor, and modeling relevant to the learner). Scoring for pre-conditions and instructional elements was: 2 = much; 1 = some; 0 = little or neutral; and -1 = negative.

(Insert Figures 3-5)

Learner pre-condition scores by change groups were as follows:

Group	Average	Range
High Change	15.2	11-20
Moderate Change	14.3	12-16
Low Change	8.25	6-11

In terms of pre-conditions, there is a good deal of similarity and overlap between the high and moderate change groups. There is no overlap between the low change group and either of the other groups, however. The high change group scores nearly double the low change group scores.

A more detailed examination of patterns within and across groups reveals some useful information. Some clear differences between the high and low change group pre-conditions exist in the areas of goals, perceived literacy demands, the success of instructors in establishing rapport, and links between instruction and learner literacy use at work and home.

Goals: Three of the four learners in the low change group expressed no clear learning goals, and when Alicia's job changed, her goal of education to get a better job disappeared or at least greatly diminished. Most in the high change group expressed at least one learning goal, and more than half reported several. William's multiple self-improvement goals, Leonard's drive to complete the GED so he could become a police officer, and Rosetta's desire to improve in English enough to participate in team meetings contrast sharply with Jeanne's reluctance to be in class, Martha's (perhaps accurate) belief that she didn't really need the class, and Wilma's vagueness about why she was in class.

Perceived Literacy Demands: All in the high group perceived their daily literacy demands to be high (and often new), whereas literacy demand was perceived to be considerably lower by those in the low change group. Four of the five in the high group had recently experienced promotion or job restructuring which placed new and greater literacy and language demands upon them. Leonard, who held two jobs, was expected to go to training classes for one of these jobs and anticipated still greater literacy demands in preparing for the GED and later becoming a police officer. This contrasts sharply with the low change group. Alicia actually

perceived her daily literacy demands to be less when she took a street repair position within the first weeks of class. Jeanne reported she could avoid most literacy for her job and didn't like to read much at home. Wilma faced few job literacy demands beyond bottle labels and a few forms. Martha differs a bit from the others in that she saw some literacy tasks associated with her daily life but didn't see any of them as particularly demanding.

Rapport with Instructor: Learners in all classes had access to a variety of instructional formats, but the effectiveness of this instruction (from the learner's perspective) differed considerably. For example, no-one in the low change group reported having much positive rapport with their instructor. (It should be noted that none reported negative rapport either.) This contrasts sharply with the high change group. Rosetta came to class primarily because of previous positive experiences with her teacher. William began to pattern his own work and home behavior upon the patient, collaborative models of his instructors. Lorraine found her link with her instructor to be a pathway to exciting new possibilities and Leonard trusted his teachers sufficiently to do whatever they asked of him as he became aware of his own improvements and changes. Only Mike, of the high group, did not indicate positive rapport though he worked effectively with his instructor.

Links of Instruction to Daily Applications: Differences between the high and low groups were apparent, but not as clear-cut, in the area of linking instruction to each learner's daily literacy use. Class instruction was reported by all high change learners to be clearly connected to their daily use. This often related directly to work (as with Mike, Lorraine, Rosetta, and William) but also to home use with children, religion, daily tasks, and personal activities. Rosetta's descriptions of going to the library to find a book in English or being startled at praying in English are two examples of this as is William's reviving a poetry writing-habit. For the low group, links are less intense. The instructor was not able to find any links with Wilma, whose job required little literacy and who seemed interested in little related to literacy at home. Alicia's instructor was able to make a few links to her home repair activities but faced the daunting task of dealing with a learner whose job had become devoid of literacy connections. The instructor for Jeanne and Martha managed to make some links to daily use but really had to work hard to accomplish this. In spite of possible future job demands, neither Jeanne nor Martha perceived themselves to need help with current job literacy demands (i.e., Jeanne could avoid them and Martha already could do them). Personal projects (trip planning and developing a garden) were clear attempts by the instructor to make links to home literacy use , but the attempts met mixed success as did stretching for home examples of procedure reading (i.e., manuals and appliance reading). Each of these two women reported themselves as uninterested in changing and as relatively happy with their lives. Jeanne's husband read most of the procedures in her house, and Martha felt she could read well enough for her needs.

Comparing Moderate to High and Low Categories: The pre-condition scores of the moderate change group are very close to those of the high group, and yet learners simply made fewer, less intense literacy-related changes. There were several possible reasons for this. Most of the high change group reported a good deal of positive rapport with their instructors while the moderate change group reported only a little positive rapport. There were also some differences in perceived literacy demands. For example, Trang and Carole experienced few job-related literacy demands, even though their interests, self-concepts as learners, and previous experience as learners were all supportive of being able to make literacy change. Trang's opportunities for English language and literacy use were limited to class and home use, as were Carole's opportunities. Part of Carole's moderate change status can be explained by the fact that she already invested a good deal of her time in home literacy activity so growth was likely to be limited. Elizabeth also reported several pre-existing literacy interests. Without major life changes, Elizabeth had limited room for literacy change and therefore was in the moderate change group. Martha, in the low change group, also fits this pattern to a lesser degree. Her pre-

condition scores suggest she is quite close to the moderate group. Low job literacy demand and satisfaction with her current situation, however, tended to outweigh all other influences.

Lorraine the Surprise: Lorraine's pre-condition score (i.e. 11) suggests she should be in the low change group instead of the high change group. She had virtually no literacy related interests, a not particularly strong self-concept as a learner, and few successful previous literacy or learning experiences. All she had going for her was increased job literacy demand (which came with her promotion), a somewhat vague goal for improvement, and solid instruction and rapport with her instructor. In Lorraine's case, this was enough. As a learner, she caught fire, developed new interests, and took pleasure in her new accomplishments. Lorraine was the sort of learner instructors share stories about. She was also unusual.

Utility of the Model: In most cases, the model appears a relatively good predictor of learner literacy change resulting from brief workplace literacy classes. The case studies reveal how instruction and the mix of learner predispositions as well as learner perceived demands and opportunities influence literacy change and transfer beyond the classroom. Clear goals and new literacy demands are very important. To a slightly lesser degree, so too are rapport with the instructor and the ability of the instructor to make links to learner daily life. Learners satisfied with their current situation as well as learners already heavily involved with literacy appear unlikely to make much change.

Implications for Instructors and Program Developers

Many of the observations above about demand and linkage will appear to be "common sense" to experienced teachers. In the negotiated and complex environment of the workplace, however, it is often difficult and less common than we would like for instructors to act upon all these observations. For example, the course at the medical instruments firm followed many of the recommendations for developing effective workplace programs. A trained workplace literacy instructor worked hard to create learning activities linked to workplace tasks, planning was done in collaboration with the human resources manager, learners were screened, and participation was voluntary. The instructor, however, was not able to involve workers in planning the course or to get on the plant floor to perform literacy task analyses or determine actual workplace literacy demands. Without this information, he faced a very difficult teaching situation when many of the learners indicated they currently faced few job literacy demands. Even with this constraint, tests revealed that most learners improved in ability to read and write procedures, and some learners, like Carole, were able to transfer some learning beyond the classroom. Transfer to workplace and home activity for others, however, was limited. The decision to have workers take classes in preparation for future workplace literacy demands "made common sense" at the time of the course in light of ISO 9000 guidelines calling for continuous education. The effectiveness of transfer was limited by the decision to exclude workers from planning the course and from subsequent efforts to gather information on actual workplace literacy demands. Worker involvement might have revealed that Wilma was not the only cosmetics worker nor Alicia the only municipal worker toperceive themselves facing few current literacy demands. Such individuals were much more common than the twelve case studies suggest, since instructors chose for case study participation students they thought likely to attend for at least six weeks. Many learners are in workplace literacy classes without clear goals and without facing immediate literacy demand. Many are satisfied with their lives and don't much want them to change.

This study has several implications for program developers and instructors.

1) If transfer beyond the classroom is desired, spend time early (preferably before developing the class) determining the literacy demands faced by each learner in the workplace and home. To do otherwise is to gamble, and all gamblers sometimes lose.

2) Establish regular class and individual time to help learners develop and refine learning goals. Lack of goals, extremely limited goals and unclear goals appear to severely limit transfer.

3) Try to actively develop positive rapport and develop links to learners' lives. This is always a good idea, but appears to be especially important with adult learners in brief workplace literacy classes.

4) To increase the likelihood of transfer, aim for a mix of learner-centered and workplace-centered goals and activities. Situations where these two overlap are likely to bring about the most success.

5) Be aware that you are likely to be teaching more than just literacy. Many learners reported transferring to home and work use the discussion, listening, and collaborative methods modeled by their instructors.

6) Be open to surprises like the learner Lorraine, who surpassed all expectations.

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Workplace Literacy Transfer Model

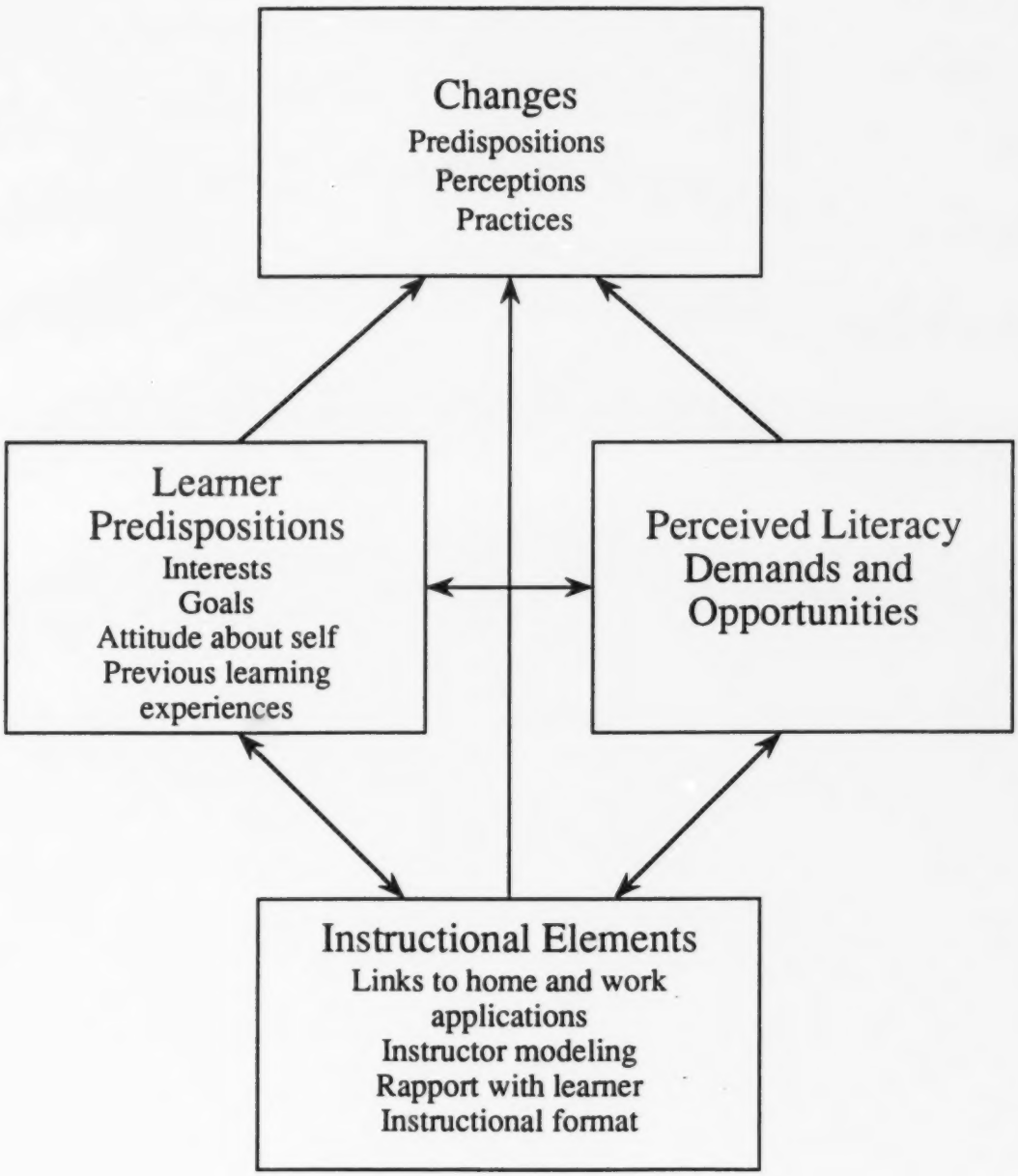

Figure 1

Changes During Course of the Class

(2=much change; 1=a little change; 0=no change; -1= negative change)

	Literacy Practice		Goals	Interests	Self-Concept	Demands & Opport.	Level of Change
	Home	Work					
Mike	2	2	0	0	2	2	High
Lorraine	2	2	0	1	0	2	High
Elizabeth	1	0	0	0	2	1	Moderate
Wilma	1	0	0	0	0	0	Low
Trang	2	0	1	0	0	1	Moderate
Rosetta	2	1	0	1	2	1	High
Jeanne	0	0	0	0	1	0	Low
Carole	1	1	0	0	0	1	Moderate
Martha	1	0	0	0	0	0	Low
Leonard	2	1	0	1	1	2	High
Alicia	1	-1	0	0	0	-1	Low
William	2	1	1	1	0	1	High

<u>High</u> = Mike, Lorraine, Rosetta, Leonard & William
<u>Moderate</u> = Elizabeth, Trang & Carole
<u>Low</u> = Wilma, Jeanne, Martha & Alicia

Figure 2

Pre-Conditions for Learners with High Change

(2=much; 1=some; 0=little or neutral; -1=negative)

	Mike	Lorraine	Rosetta	Leonard	William
Goals	1	1	2	2	2
Interest	2	0	2	1	2
Self-Concept	0	0	0	1	2
Prev. Exper.	2	0	2	2	2
.....	.....	.....	.....	.....	.....
Perc. Demand	2	2	2	2	2
Perc. Opport.	1	0	1	1	2
.....	.....	.....	.....	.....	.....
Instruct. Format	2	2	2	2	2
Link to use	2	2	2	2	2
Rapport	0	2	2	2	2
Model	1	2	1	1	2
Total	13pts	11pts	16pts	16pts	20pts

Average: 15.2

All have learning goals, perceive high demand, and are in classes which link instruction to personal use at work and home. All but Lorraine have strong previous experiences to draw upon.

Figure 3

Pre-Conditions for Learners with Moderate Change

(2=much; 1=some; 0=little or neutral; -1=negative)

	Elizabeth	Trang	Carole
Goals	1	1	0
Interests	2	2	2
Self-Concept	2	2	2
Previous Experience	2	2	2
•••••••••	•••••••••	•••••••••	••••••
Perc. Demands	2	0	1
Perc. Opport.	1	1	2
•••••••••	•••••••••	•••••••••	••••••
Instruct. Format	2	2	2
Link to use	2	2	2
Rapport	0	0	1
Modeling	2	0	1
Total	16pts	12pts	15pts

Average: 14.3

Low goals and rapport for all. Low perceived demands for Trang and Carole and low perceived opportunities for Elizabeth and Trang served to limit change. All began with strong self-concepts as learners which remained stable.

Figure 4

Pre-Conditions for Learners with Low Change

(2=much; 1=some; 0=little or neutral; -1=negative)

	Wilma	Jeanne	Martha	Alicia
Goals	0	0	0	1 to 0
Interest	2	1	1	1
Self-Concept	1	0	1	2
Previous Exper.	2	0	2	2
.....	.....	.....	.....	.....
Perc. Demands	0	0	1	-1
Perc. Opport	0	0	2	1
.....	.....	.....	.....	.....
Instruct. Format	2	2	2	2
Link to use	0	2	2	1 to 0
Rapport	0	0	0	0
Modeling	0	1	0	1
Total	7pts	6pts	11pts	9pts

Average: 8.25

All share a lack of clear goals. Most perceive few demands. In spite of a varied instructional format, it was not possible to build rapport with the instructor. Martha, who looks most like moderate change, already read a good deal at home so she couldn't improve much in perceived opportunities.

Figure 5